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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,037	08/15/2001	Toru Koizumi	35.C15698	1876

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

QUIETT, CARRAMAH J

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,037	KOIZUMI ET AL.	
	Examiner	Art Unit	
	Carramah J. Quiett	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 and 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 17-20 and 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/15/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the Election of Species in the reply filed on 6/17/2005 is acknowledged. The traversal is on the ground(s) that the Applicants believe that Fig. 1 shows a feature of the invention, which is common to all of the embodiments identified in the Office Action. Specifically, Figs. 2-5 show a circuit for generating a bias to be applied to a transfer transistor Q1 of Fig. 1, and Figs. 6-7 show a system, which includes a sensor of Fig. 1. This is not found persuasive because figs. 2-5 each are different embodiments of the transfer transistor Q1 of Fig. 1.

The requirement is still deemed proper and is therefore made FINAL.

2. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statement (IDS), filed on 08/15/2001, has been placed in the application file, and the information referred to therein has been considered as to the merits.

Drawings

5. Figures 13-16, and 17A-17D should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities: The units for the fall speed in the "Brief Summary of the Invention" are not consistent with the units disclosed in the "Detailed Description of the Preferred Embodiments." On page 11 lines 9-10 and page 13 line 11, the Applicant states that the fall speed $10\text{V/sec} > V_{\text{off}}$. However, on page 15, lines 26-27 and in other places throughout the disclosure, the Applicant states that the fall speed $10\text{V}/\mu\text{sec} > V_{\text{off}}$.

Appropriate correction is required.

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

8. Claim 17 is objected to because of the following informalities: The units for the fall speed in this claim and the "Brief Summary of the Invention" are not consistent with the units disclosed in the "Detailed Description of the Preferred Embodiments." For the specific the pages

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and lines in the Specification, please see in Paragraph 5 above. For examination purposes, the Examiner will consider the fall speed unit as “10V/ μ sec>V_{off}” instead “10V/sec>V_{off}” which is a limitation recited in claim 17. Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 1-4, 5-8, 17-20, and 25-27** are rejected under 35 U.S.C. 102(e) as being anticipated by Gowda et al. (6,344,877).

*Note: The U.S. Patent and Trademark Office considers the Applicant’s “*adapted to*” language to be synonymous with “capable of”. The phrase “adapted to” as used in the claims broadens the scope of the claims. If a limitation is written with “adapted to...” language, a reference is deemed to meet that limitation if the reference discusses the same element that, although not actually performing the claimed function, is **structurally capable** of performing it.

For **claim 1**, Gowda discloses an image pickup device (fig. 2) comprising:

a plurality of pixels (fig. 2, ref. 30; col. 4, lines 1-7) each including a photoelectric conversion unit (fig. 3, ref. 26), a semiconductor area to which a signal from said photoelectric conversion unit is transferred (col. 4, line 62 – col. 5, line 18), a transfer switch (fig. 3, ref. 22) adapted to transfer the signal from said photoelectric conversion unit to said semiconductor area

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(col. 5, lines 19-59), and a read unit (fig. 3, ref. 23) adapted to read out the signal from said semiconductor area (col. 5, line 50-59); and

a drive circuit (fig. 3, ref. 14; col. 4, lines 27-62) *adapted to* output a first level at which said transfer switch is set in an OFF state, a second level at which said transfer switch is set in an ON state, and a third level between the first level and the second level, wherein said drive circuit controls to hold the third level for a predetermined time while said transfer switch is changing from the ON state to the OFF state.

For **claim 2**, Gowda discloses a device wherein said read unit includes an amplification transistor (fig. 3, ref. 23) for amplifying and outputting the signal in said semiconductor area (col. 5, lines 50-59).

For **claim 3**, Gowda discloses a device wherein said photoelectric conversion unit includes an embedded photodiode (fig. 3, ref. 26; col. 4, line 62 – col. 5, line 18).

For **claim 4**, Gowda discloses a device further comprising
an analog/digital conversion circuit (fig. 2, ref. 52) adapted to convert a signal from each of said plurality of pixels into a digital signal (col. 4, lines 12-15).

a signal processing circuit (fig. 2, ref. 44) adapted to process the signal from said analog/digital conversion circuit (col. 4, lines 59-61), and

a recording circuit (fig. 2, after ref. 44) adapted to recording the signal processed by said signal processing circuit – inherently, because after ref. 44 (col. 4, lines 59-61), the image signals are transferred to processing/image storage electronics. Please see fig. 2.

For **claim 5**, Gowda discloses an image pickup device (fig. 2) comprising:

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a plurality of pixels (fig. 2, ref. 30; col. 4, lines 1-7) each including a photoelectric conversion unit (fig. 3, ref. 26), a semiconductor area to which a signal from said photoelectric conversion unit is transferred (col. 4, line 62 – col. 5, line 18), a transfer switch (fig. 3, ref. 22) adapted to transfer the signal from said photoelectric conversion unit to said semiconductor area (col. 5, lines 19-59), and a read unit (fig. 3, ref. 23) adapted to read out the signal from said semiconductor area (col. 5, line 50-59); and

a drive circuit (fig. 3, ref. 14; col. 4, lines 27-62) *adapted to* output a signal for controlling said transfer switch so that a time during which said transfer switch changes from an ON state to an OFF state becomes longer than a time during which said transfer switch changes from the OFF state to the ON state.

Regarding **claims 6-8**, these claims correspond to the apparatus claims 2-4, respectively. Therefore, claims 6-8 are analyzed and rejected as previously discussed with respect to claims 2-4, respectively.

For **claim 17**, Gowda discloses an image pickup device (fig. 2) comprising:

a plurality of pixels (fig. 2, ref. 30; col. 4, lines 1-7) each including a photoelectric conversion unit (fig. 3, ref. 26), a semiconductor area to which a signal from said photoelectric conversion unit is transferred (col. 4, line 62 – col. 5, line 18), a transfer switch (fig. 3, ref. 22) adapted to transfer the signal from said photoelectric conversion unit to said semiconductor area (col. 5, lines 19-59), and a read unit (fig. 3, ref. 23) adapted to read out the signal from said semiconductor area (col. 5, line 50-59); and

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a drive circuit (fig. 3, ref. 14; col. 4, lines 27-62) *adapted to* output a signal adapted to control said transfer switch so that a fall speed V_{off} for changing said transfer switch from an ON state to an OFF state has a relation $10 \text{ V}/\mu\text{sec} > V_{\text{off}}$.

Regarding **claims 18-20**, these claims correspond to the apparatus claims 2-4, respectively. Therefore, claims 18-20 are analyzed and rejected as previously discussed with respect to claims 2-4, respectively.

Regarding **claims 25-27**, these claims are method claims corresponding to the apparatus claims 1, 5, and 17, respectively. Therefore, method claims 25-27 are analyzed and rejected as previously discussed with respect to claims 1, 5, and 17, respectively.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Watanabe et al. (U.S. Pat. 6,023,293)

A CMD type pixel where the at the time of accumulating, reading, and resetting gate voltage can be set to different levels, respectively.

Koizumi et al. (JP2000-224495)

An image pickup apparatus configured to reduce noise and to reduce power consumption.

Endo (JP2000-196947)

An image pickup apparatus configured to reduce noise and to reduce power consumption.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carramah J. Quiett whose telephone number is (571) 272-7316.

The examiner can normally be reached on 8:00-5:00 M-F.

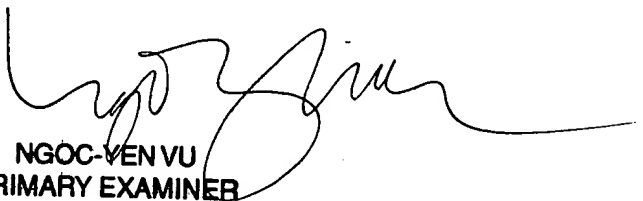
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJQ

August 5, 2005


NGOC-VEN VU
PRIMARY EXAMINER